

ABSTRACT

A typical duplex GFCI receptacles has two buttons, a test button that, when pressed, shuts off power to the receptacle and down stream devices, and a reset button that, when pressed, restores power to the GFCI and down stream devices. Generally, the test button is pressed to verify that the GFCI will interrupt power to the conductive paths and the reset button is pressed to reset the GFCI. In operation, the test portion of the GFCI will automatically break electrical continuity in one or more conductive paths (i.e., open the conductive path) between line and load sides upon the detection of a fault such as a reverse wiring condition, a ground fault, an open neutral and/or a defective GFCI device. When this happens the reset button in the typical GFCI receptacle is then pressed in an to attempt to restore power. The GFCI here disclosed has only one button which is used for both the test and reset operation. It is pressed to test the GFCI and its associated circuitry for operability and, only if all circuits are operable, upon release it resets the GFCI by closing open conductive paths. If, during operation, the test portion of the GFCI detects a fault and operates to shut off power to the receptacle and down stream devices, the pressing and releasing of the single button will reconnect power to the receptacle and down stream devices only if the GFCI is operational, if an open neutral condition does not exists and/or if the device is not reversed wired.